

Essential Collaborative Technology Tools for the 21st Century: FMCS TAGS System

Michael J. Wolf*

Jon Numair**

Jack Yoedt***

Mediators employed by the Federal Mediation and Conciliation Service (“FMCS”) utilize a powerful set of technology tools that helps groups more effectively solve problems, make decisions and implement those decisions more successfully. FMCS mediators use these tools to help customers conduct collective bargaining negotiations, strategic planning sessions, grievance meetings, internal elections, large conferences, as well as remote meetings and online surveys via the Internet.

Known as the FMCS TAGS System,¹ this network of Internet servers, mobile computers, electronic conferencing facilities, customized software and external partners has demonstrated significant achievements during its first two years of operation. FMCS customers report that TAGS helps them better prepare for meetings and negotiations, retain better records, communicate better with constituents, minimize the impact of geographic separation and save time, travel and money.

FMCS mediators integrate TAGS technology tools with their traditional skill set to help participants engage more openly and honestly, share knowledge and opinions more constructively, generate better ideas and build a stronger commitment to joint action. As a result, TAGS technology tools help FMCS customers conduct shorter, more productive, problem-focused meetings and help minimize transaction costs associated with group decision-making.

This article describes the reasons that FMCS invests in technology tools, identifies the hardware and software solutions adopted by FMCS, postulates why those solutions have been successfully applied by FMCS mediators and explores several factors that any group should consider before using such leading edge tools.²

The Mission of FMCS

As elucidated elsewhere in this publication, the Federal Mediation and Conciliation Service is a unique agency of the U.S. Government, created by Congress more than fifty years ago to help prevent, manage and resolve conflict. Today, this mission is accomplished by a cadre of nearly two hundred full-time federal mediators,

* Director, FMCS Mediation Technology Services.

** Commissioner, FMCS.

*** Commissioner, FMCS.

¹ TAGS is an acronym for *Technology Assisted Group Solutions*.

² The authors wish to emphasize that even though this article focuses on leading edge technology tools, no such tools are more effective than the person using them. The single most important criterion for successful application of technology tools in group problem solving and decision-making is the skill set of the person who makes judgments about when and how to use the tools.

who operate from more than seventy field offices strategically located throughout the United States. The primary focus of FMCS remains the mediation of collective bargaining disputes. In this manner, FMCS helps employers and unions achieve the related goals of profits and jobs, thereby contributing to the strength of the economy.

Conflict prevention is a strategic element of labor conflict management. FMCS therefore offers a wide range of custom-designed preventive mediation services and training workshops. FMCS helps employers and unions improve workplace relationships and work more effectively together on issues of mutual interest. The fastest growing aspects of FMCS work include consulting, systems design, education/training, facilitation and convening, mediating EEO and other individual workplace disputes, regulatory negotiations and non-workplace disputes.³

Why FMCS Uses Leading Edge Technology Tools – Contemporary Issues in Group Problem Solving and Decision Making

Meeting matrix. A decade ago, the concept of a meeting universally meant people in the same room at the same time engaging face-to-face. Today, the concept of a meeting can be very different. As organizations consolidate, problem solvers and decision-makers often find themselves far removed from the physical table around which decisions must be made. Global competition requires that organizations run on a leaner tank of gas, sometimes working round-the-clock to obtain the best return on capital investment. Meetings that once occurred in a same-time, same-place environment might now need to take place in a same-time, different-place or different-time, same-place environment. Some organizations must even face the challenge of engaging in a different-time, different-place modality.

Cost containment. Corporations are constantly challenged by the need to satisfy stockholder demands for short-term financial gain. Government agencies are asked to operate more efficiently and still provide better service to the public. Some agencies now must face direct competition from private sector service providers. As private and public sector employers search for ways to demonstrate a competitive advantage, they take a closer look at the transaction costs associated with problem solving and decision-making. For example, the cost for a dozen key leaders traveling to a common location to conduct a two-day meeting can easily run \$20,000. Responsible leaders must ask themselves whether such meetings achieve value that offsets such costs.

Process problems. The professional staff of FMCS is called upon to facilitate thousands of meetings every year. Certain common characteristics challenge many of the problem solving and decision-making groups that FMCS serves. Meeting objectives are oftentimes unclear. The “right people” might not be present. Certain participants tend to talk a lot when in fact they have very little to say. People attack each other rather than the problem. Even worse than bad process, many groups have no process whatsoever. Participants do not actively listening to one another, talk for the wrong reasons, or fail to follow through on promised actions. Meeting minutes are often issued

³ E.g., environmental disputes, Native American tribal matters, water rights disputes, international cases (thirty-eight nations on every continent during the past four years) and other matters that implicate sensitive public policy issues.

late (if at all), or fail to accurately reflect the content of the meeting. These common occurrences plague decision makers and stymie problem solvers at all levels.

For example, employee Joe is about to enter a meeting with his boss Mary. Just before they walk into the conference room together, Joe tells Mary about a great idea that he wants to offer the group. As they cross the threshold, Mary's reply is brief, "We can't do that." Ten minutes later, a wonderful facilitator stands at the flip chart and asks the group to begin brainstorming their best ideas. Joe will probably hesitate before offering his "great" idea to the group. He might even withhold the idea. This is referred to as *evaluation apprehension*.

Production blocking is an equally fascinating concept. Trainers are fond of saying that the best ideas occur at the fringe. Yet few people want to be perceived as being at the fringe. People want to be respected for their ideas, but most also want to be liked and respected by their peers. Those who are perceived as being at the fringe are often ostracized by their peers. Someone concerned about smirks and chuckles is not as likely to offer an out-of-the-box idea. Like evaluation apprehension, production blocking can cause even the best ideas to lay dormant.

In August of 1999, FMCS Director C. Richard Barnes asked members of his staff to explore the world of collaborative technology in an effort to find tools that might help FMCS customers overcome these types of challenges regarding time, place, cost and process. Such tools, if they exist, would certainly help FMCS better accomplish its mission.

TAGS Technology Tools in the Year 2002

FMCS Director Barnes and his staff explored hundreds of hardware and software tools in their effort to find those that most effectively help groups solve complex problems, make important decisions and take action that makes a difference. The FMCS TAGS System comprises some of the best collaborative technology tools available today. Under the umbrella of FMCS Mediation Technology Services, that collection continues to change and grow as new tools become available.

On the Internet

The FMCS staff supports several servers dedicated to online applications of TAGS technology. Even though FMCS runs TAGS collaborative software on a generic laptop computer when Internet access is unavailable, running large numbers of concurrent web-based meetings requires more robust hardware. Present growth patterns and advances in technology will probably result in doubling or tripling the current hardware configuration during the next several years.

Mobile Electronic Conference Centers

TAGS-enabled Electronic Conference Centers ("ECC"s) are currently available for FMCS customers in Atlanta, Cleveland, Kansas City, Minneapolis, Oakland, Las Vegas, Newark and Washington, D.C. As of mid-2002, FMCS academic partners will complete the design and installation of ECCs in Dallas, Miami, Nashville and St. Louis. Each ECC accommodates at least fifteen participants in horseshoe seating to encourage collaboration.

The minimum equipment requirements for an FMCS ECC includes a wireless access point, projector, printer, infrared input device for a white board and/or flip chart, projection screen, 4x8 whiteboard, flatbed scanner, speakerphone, 5-port USB hub, and at least 15 laptop computers, including one that functions as a mobile server, each equipped with a wireless LAN card⁴ and a motion-sensitive security device. All FMCS ECC equipment can be packed in three 100-pound rolling travel cases for overnight shipment to customer locations.

Collaborative Software and Critical Peripherals

At the inception of TAGS, FMCS scoured the marketplace for a relatively inexpensive, easy-to-use software application with which mediators could help groups

- share various types of internal files and external resource information,
- anonymously generate ideas around which consensus could be built,
- organize and prioritize ideas, determine which ideas can be best

supported by the group, achieve *real* consensus, support the implementation phase of strategic decision-making and produce detailed meeting reports before participants leave the meeting. The initial, limited goal was to help collective bargaining representatives engage in a more open and honest, productive and problem-focused environment, especially when utilizing the interest-based bargaining model,⁵ and to help them minimize transaction costs associated with the labor-management relationship. FMCS customers embraced these technology tools more quickly than anticipated. In fact, during their initial exposure to TAGS, FMCS customers also requested technology tools that could enable effective online problem solving meetings,⁶ traditional contract negotiations, surveys, strategic planning sessions, focus groups, grievance meetings, labor-management committee meetings, large conferences, resolution of EEO complaints and internal voting processes. Customers asked for technology tools to digitize their paper-based documents and bridge the gap between paper flip charting and electronic flip charting. FMCS mediators expressed enthusiasm about integrating their training resource materials and administrative record-keeping systems⁷ with the technology tools used by FMCS customers. Members of the FMCS Mediation Technology Services team needed to adopt technology tools that they could support from remote locations, either via the Internet or by wireless connection when necessary.

No single technology tool best satisfies such high expectations. But FMCS adopted and adapted a small handful of hardware and software applications that, when used in concert by trained professionals, satisfies most of these diverse requirements.

⁴ LAN means *local area network*. A wireless access point connected to wireless LAN cards in each computer on the TAGS network perform the same functions as a traditional hard-wired network hub connected to hard-wired network cards in each computer on a network.

⁵ See description at page __, *infra*.

⁶ (1) Same time, same place; (2) same time, different place; (3) different time, same place; (4) different time, different place.

⁷ Itineraries, travel vouchers, case management, timekeeping forms, customer reimbursement agreements, etc..

eRoom®

eRoom software from eRoom Technologies, Inc.⁸ is a powerful and secure Web-based collaboration tool used by hundreds of corporations and government agencies worldwide. eRoom was originally developed to support product design and production functions within large corporations. The flexible and intuitive user interface allows people in diverse locations to work together through their Web browsers without the need for proprietary client-side software.⁹ FMCS adapted this highly customizable tool to support a far broader range of collaborative processes.

Imagine logging on to your computer, clicking a link in an e-mail message and immediately entering a virtual conference center. On the left side of your browser is a navigation pane. At the top of your screen, a welcome message gives you basic instructions about what to. Various icons populate the middle of your browser screen. Each icon represents a distinct and configurable function of eRoom. Clicking one of the easily distinguishable icons might open a folder of documents, invite you into an interactive threaded discussion, allow you to participate in a quick poll or enable you to browse a relevant web site. Sophisticated integrated databases, calendaring tools useful for convening functions, Microsoft Outlook calendar and task integration, automatic e-mail notification of changes, and version tracking of edited documents are just a few of the exemplary functions enabled in this software. Members of an eRoom can collaborate in real-time or asynchronously. Access control functions permit several groups to share common space and to prevent others from seeing confidential information. Minimal instruction helps the user, but user training is not required.

Facilitate.com®

If eRoom is a virtual conference center, *Facilitate.com*¹⁰ is the virtual flip chart in the corner of the conference room. Developed by McCall, Szerdy & Associates, Inc., this software provides a very useful server-based collaboration tool. Any contemporary browser is sufficient to connect a user to the Facilitate.com-based electronic flip chart that runs on the TAGS web site.¹¹ FMCS currently has twenty electronic flip charts on its Internet server, plus fifteen additional electronic flip charts running on mobile servers. Groups engaging in problem solving and decision making can simultaneously and securely¹² use eRoom and Facilitate.com on the TAGS Internet server to engage across time and space from anywhere in the world.

The forte of Facilitate.com is its support for generating and organizing high quality ideas, rapidly turning those ideas into decisions and enabling both face-to-face as well as remote participation. An effective mediator or facilitator can use the software

⁸ Visit the eRoom Technologies website at <<http://www.eRoom.com>>.

⁹ A small, free plug-in enhances functionality, but is not necessary.

¹⁰ Available at <<http://www.facilitate.com>>.

¹¹ Visit the TAGS website at <<http://tags.fmcs.gov>>.

¹² Access to the TAGS Internet servers is guarded by an electronic lock. Users can enter using a 2-part key: their user ID in combination with a complex password. The TAGS Internet servers use Secured Socket Layer (“SSL”) technology to secretly encode information that is sent over the Internet between a TAGS participant and the TAGS server. This helps ensure that the information remains secure and confidential while in transit.

to significantly enhance real time and asynchronous engagements, including web-based surveys. Despite the relatively steep learning curve for the third-party neutral to master this sophisticated and highly flexible tool, participants require absolutely no training.

"In today's fast-paced world, it is harder and harder to find times and places where all the necessary people can be brought together to meet and exchange ideas," notes Julia Young, Vice President of Facilitate.com. "Using Facilitate.com, the Internet can free people to meet whenever they can, wherever they are. This makes it easier to plan meetings attended by all the important people needed to make things happen."

mimio® Devices

mimio allows the user to record, print, play back, and share whiteboard and flip chart information. *mimio* consists of an infrared/ultra violet receiver that clips to a flip chart or adheres to a whiteboard, a stylus set (transmitters), an electronic eraser, a cable and software.

As the facilitator writes on the flip chart or whiteboard, pen strokes are captured in color and saved directly to a computer in real time. Multiple pages of information can be saved, played back (pen stroke by pen stroke) and printed during a *mimio* session. Users can collaborate with other *mimio* users over a Microsoft NetMeeting call, or use optical character recognition add-on software to convert meeting notes into editable text, which can then be copied and pasted into other Windows applications. The handwriting recognition software is amazingly accurate and even has spell check.

NetMeeting®

NetMeeting is a free, multifunctional program that resides on every computer with a Windows operating system. It enables users to exchange files, share software applications,¹³ conduct audio and/or video conferencing and engage in encrypted, text-based chat with multiple people. With the whiteboard function, users can diagram information, use a sketch, or display graphics. NetMeeting Remote Desktop Sharing enables users to navigate and manipulate another computer as if the user was sitting in front of that computer. Few free software programs are better than this product.

How TAGS System Works

Convening and Meeting Preparation

Convening a synchronous meeting – online or in person – can be very time consuming. Ineffective convening can inadvertently exclude people from attending a meeting. TAGS tools make convening far more efficient and effective. The meeting organizer simply creates a virtual meeting room on the TAGS Internet server, often times using one of the many templates posted on the server. The meeting organizer creates a customized notice for designated participants. The TAGS server automatically sends all meeting participants the notice via e-mail containing a link to a shared calendar. Participants click the link and immediately enter the calendar function on the TAGS server. They follow simple onscreen instructions to enter their available dates, together with any comments or suggestions. The meeting organizer then checks

¹³ Only one computer needs to have the application, yet all participants can simultaneously use the application.

the calendar for dates available in common to the participants and establishes the meeting date. The TAGS server automatically sends each participant a second notice containing the meeting date. Participants who use Microsoft Outlook can have the meeting date and any associated tasks automatically downloaded to their personal calendar.

Anyone who spends time leading meetings recognizes that participant preparation is as important as what actually occurs during the meeting. Participants who are unprepared to solve a problem or make a decision will be seriously disadvantaged during any meeting in which they are expected to do so.

A TAGS-enabled meeting offers participants many more ways to prepare than a traditional meeting. Participants can logon to the TAGS Web site, interactively contribute to the agenda, review and edit documents, review the record of past meetings, engage in threaded text discussions and post links to relevant Web sites. They can remind colleagues about key interests at stake, add anonymous or attributed (and date/time stamped) options to an electronic flip chart, build on others' ideas, evaluate options, review and follow up task assignments, or even contribute to and update implementation timelines.

A traditional meeting begins after participants physically arrive and ends when they leave. TAGS allows the pre-and post-meeting phases to seamlessly blend into the meeting engagement itself. Groups that use appropriate technology tools begin to find it difficult to determine when the actual meeting begins or ends. For example, several large membership organizations use TAGS in conjunction with their national meetings. Up to 2000 people attend each meeting. All meeting content is posted to the TAGS server, after which even those who cannot physically attend the meeting can interactively review meeting content, including photos and transcripts. The content remains posted until the next meeting, encouraging participants to continue engaging one another on key issues between gatherings. Information pertinent to the next meeting is added months in advance, giving participants the opportunity to arrive fully cognizant of the issues to be addresses as well as other participants' interests and ideas. Many participants choose to engage in asynchronous brainstorming before the next meeting with their colleagues. Such groups accomplish so much between meetings that they begin to have difficulty determining when the last meeting ended and the next one begins.

Face-to-Face Meetings

TAGS tools have been used in face-to-face meetings of up to four hundred participants. In most TAGS-enabled meetings, each participant is armed with a computer. In other such meetings, several participants share a computer. FMCS mediators work with customers in advance of a face-to-face meeting to determine the degree to which TAGS tools will be used and the ways in which the tools will be used.

In a traditional facilitated meeting, participants wait to be recognized, and then individually express an idea while a facilitator or designated scribe tries to capture and summarize each idea one-at-a-time, often on a paper flip chart. Participants wait – *sometimes* patiently – when it is time to tear off the paper and methodically tape it to the wall. As the day wears on, the walls become filled with paper. Mediocre facilitators often fail to date and number their pages, fail to post them in a meaningful order on the

walls, fail to write clearly or sufficiently large enough and therefore ultimately produce an incoherent meeting record. Participants often start to lose patience late in the day when the tape begins to fail and paper starts dropping from the walls.

Effective group process during such meetings requires participants to exercise good active listening skills, a high degree of concentration and even more patience as they wait their turn to speak. The speed, or lack thereof, at which certain meeting segments move can fatigue even the most enthusiastic participant. At the end of the meeting, flip charts are often rolled up and remain inaccessible until the next meeting. Quite often, someone who did not attend the meeting does his or her best to transcribe the pages, but the transcribed notes are often inaccurate or difficult to understand. Other times, the flip charts are simply thrown away.

Conversely, during a TAGS-enabled meeting, participants *simultaneously* contribute ideas with easy-to-use TAGS software on a network of computers. All ideas immediately post to the electronic flip chart displayed on each person's computer and on a large screen at the front of the room. Participants simultaneously build on others' ideas and continue to offer new ideas. Timesaving is an exponential factor of group size. It is not uncommon for a group of twenty people to post eighty to one hundred ideas in less than ten minutes. In contrast to traditional meetings, participants' ideas are posted in their own words and with complete anonymity.

TAGS-trained FMCS mediators recognize that technology tools do not replace the human elements that make meetings effective. Nor does this technology replace expert mediation skills and human interaction among participants in a face-to-face meeting. Instead, the mediator uses technology to enhance participant interaction and outcome. During at least fifty to seventy percent of a typical TAGS-enabled meeting, participants are encouraged to push the TAGS laptop computer screens horizontal to the table *and talk*. Using a mixture of group discussion and TAGS tools, participants can categorize and prioritize ideas, use electronic "ballots" to anonymously indicate their level of support for each idea, view tabulated results on-screen and discuss results.

Before the conclusion of a face-to-face meeting, the FMCS mediator can help participants use TAGS to assign tasks with completion targets and implementation timelines. The mediator can print out complete meeting notes and place them in the hands of participants before they leave the room. Relevant information remains posted to the TAGS Internet server for post-meeting use or is archived at participant request for future use. Otherwise, confidentiality is preserved by electronically shredding the data.

On the Internet

TAGS is a multi-level virtual conference center on the FMCS servers. Participants enter the TAGS conference center by clicking a link in an e-mail message, or by entering their user ID and complex password¹⁴ on the TAGS website.¹⁵

¹⁴ A complex password contains eight or more characters, with at least one character in three of the following four categories: upper case, lower case, numerical and symbol. Commercially available code crackers are substantially unable to crack such codes.

¹⁵ See *supra* note 10.

Participants can go directly to a prescribed topic or enter a secure,¹⁶ virtual conference room. The conference could be a "live" remote meeting, a survey, an asynchronous brainstorming session, an opportunity to assess ideas, a chance to view results, an action planning session or one of several other online TAGS functions. In some cases, participants can complete entire tasks online that in the past required multiple face-to-face meetings. At other times, online work is designed to shorten and sharpen the focus of face-to-face meetings. Participants who engage in real-time online meetings must have a computer connected to the Internet, a Web browser such as Internet Explorer or Netscape and a separate telephone connection for voice communication.¹⁷

Applications

Interest-Based Problem Solving

Following training in interest-based problem solving techniques, FMCS mediators provide ongoing assistance to customers who use the interest-based model to solve problems and make decisions. FMCS customers do so in labor management committees, strategic planning sessions, collective bargaining negotiations and alternative dispute resolution processes.

All participants must agree to a chosen solution in order for agreement to be reached through the interest-based decision making model. Therefore, all participants are supplied with a computer to supplement their discussions and dramatically expedite the otherwise time consuming process of decision making. Customers experienced in the interest-based model tell FMCS mediators that TAGS tools reduce their session time by as much as fifty percent.

Traditional Negotiations and Problem Solving

In more traditional problem solving models, usually one person serves as chief spokesperson for each party. Consistent with that philosophy, usually only one representative for each party enters information into the TAGS network. Information is displayed onscreen for other participants to view. As in other TAGS applications, technology does not replace discussion. Parties use technology to supplement the submission of proposals, work with reference documents and contracts, coordinate meeting activities and keep bargaining notes. Parties in these types of engagements use the TAGS Internet servers to prepare for more successful face-to-face meetings and discussions between meetings.

¹⁶ The TAGS Internet servers use 128-bit Secure Socket Layer encryption to encode transmission between participants and the servers. TAGS mobile servers wirelessly transmit data to participant computers using 128-bit dynamic encryption.

¹⁷ Broadband connections are not yet sufficiently ubiquitous to enable effective video conferencing. Scholars are also skeptical about the real value of video using contemporary technology. In the near future, FMCS hopes to integrate limited video conferencing and VOIP (Voice Over Internet Protocol) into a single broadband connection between participants.

Surveys via the Internet

TAGS-enabled surveys can open up new opportunities for communication with constituents. Like online meetings, participants access TAGS surveys with a user ID and password. They can use any computer with a browser and an Internet connection. Unlike paper-based survey tools, TAGS survey data can be tabulated in seconds, allowing key leaders to sense the pulse of their constituents in a matter of hours or days rather than weeks or months. Geographically dispersed organizations can collect empirical information far more cost effectively than in the past. Compiled data can be viewed immediately in summary form, in great detail or exported to spreadsheet & database programs for additional manipulation. Using the “vote-then-view” option, participants in appropriate forums can even see an immediate snapshot of their colleagues’ responses.

TAGS survey functions have been used by customers before going to the bargaining table, by labor management committees, during conference planning, to assess youth violence potential in schools, to conduct an employee skills assessment for a nationwide employer and to help a large employer association engage in strategic planning.

Strategic Planning and Focus Groups

Every strategic planning process is unique, but most contain the following common characteristics:

- Brainstorming ideas (in surveys or meetings)
- Recording ideas
- Categorizing ideas
- Processing ideas (discussion, elimination, modification)
- Prioritizing, weighting, factoring ideas
- Instituting ideas (action plans of who will do what by when)

TAGS enables groups to perform these functions so that meetings are more time efficient and there is better understanding and record keeping. Processing ideas in TAGS can reduce days to hours and hours to minutes. FMCS has used TAGS to prepare both regional and national strategic plans, as well as to conduct focus groups with key customers.

Conferences and Conventions

FMCS mediators have used TAGS tools to facilitate groups as large as four hundred people. Typically, these large groups use TAGS to conduct breakout sessions and virtual plenary sessions to address issues of pressing concern to participants. For example, various segments of the construction industry, together with their union counterparts, use TAGS to find better ways to attract and retain high quality employees. This has been one of the fastest growing, yet unexpected aspects of TAGS work for FMCS. Large-scale customer satisfaction has resulted in word-of-mouth advertisement throughout various industries, which has spawned regular work for FMCS mediators facilitating large conferences.

Online Meetings

TAGS-enabled online meetings save FMCS customers thousands of dollars in unnecessary travel time and out-of-pocket expenses. One forty-person planning team was able to accomplish almost everything online that used to require multi-day face-to-face meetings. At the conclusion of their online time, the forty-person team authorized a four-person implementation group to meet for a half-day session to complete the work of the team. The team accomplished its work in half the time normally allotted, and the organization saved tens of thousands of dollars in travel-related costs. The organization's leaders determined that the quality of decisions did not suffer, and, in fact, was probably enhanced by the use of TAGS technology tools.

Often times, at least one group member is unable to attend a meeting. If the missing person is a key decision maker, the meeting is often postponed or cancelled. Meetings that proceed without a key decision maker present often result in little progress, which frustrates members who participate in the meeting. TAGS technology tools can change that dynamic. Using TAGS, absent group members can interactively participate from remote locations even when they are occasionally unable to attend a face-to-face meeting. For example, during one week of traditional collective bargaining in a large midwestern city, the labor relations director participated from a thousand miles away using his Palm device and a wireless modem in one hand, and his cell phone in the other. The use of TAGS permitted negotiations to continue and enabled the parties to reach agreement.

Grievance and EEO Complaint Mediation

FMCS mediators annually resolve thousands of grievances and EEO complaints. As parties negotiate longer terms in labor contracts,¹⁸ these mid-term disputes assume greater importance in the overall labor-management relationship. Typically, a mediator can spend up to a half day after arriving at the parties' workplace simply convening the meeting, identifying issues, determining why the parties care about the issues (i.e., their interests), beginning the option exploration process and obtaining signatures that memorialize parties' agreement to mediate and reflect that each party has someone present with authority to bind the parties to an agreement. Using TAGS and a telephone, FMS mediators can now perform these functions from their desks, saving time and travel expenses. Some cases can be completely resolved without face-to-face meetings. When a face-to-face meeting is required, the mediator can spend more time helping the parties talk about the substance rather than getting ready to do so.

Collaborative Processes Like Labor-Management Committees, Organizational Development Processes and Partnership Initiatives

TAGS can improve FMCS delivery of complex alternative dispute resolution services, such as negotiated rulemaking and the mediation of public policy disputes, especially when used to bring large groups of people together via the Internet.

¹⁸ FMCS estimates that sixty percent (60%) of all labor agreements have a term that exceeds three years.

Voting Services

FMCS recently began offering electronic voting services to its customers. FMCS voting services are available for contract ratifications, union elections, corporate elections, representation elections and voting at conventions. Mediators can provide electronic voting options that include:

- Online voting via the Internet,
- Telephone voting,
- Combination online or telephone voting with mail balloting,
- On-site touch screen voting, and
- On-site paper ballot with electronic scanning.

FMCS engaged the services of two private sector companies to provide high quality, cost effective voting services. *VoteHere*,¹⁹ from Bellevue, WA, is a large firm that specializes in online voting in large public elections.²⁰ *VoteHere* acts behind the scenes to provide FMCS online and online/mail ballot services in large elections.

TrueBallot,²¹ out of Bethesda, MD, has provided voting services to unions for several years. A truly innovated company with an eye to labor union traditions and to utilizing the latest technology, *TrueBallot* is FMCS's source for telephone voting, on-site scan and touch screen voting, as well as online and online/mail ballot services in smaller elections.

FMCS customers reimburse all mediator preparation, travel and delivery time and expenses for election services. Additionally, vendor fees are passed on to the customers, as is any cost to rent and ship equipment for voting services.²²

Youth Violence Prevention

Building on the Congressionally authorized Peer Mediation Project, FMCS developed a special version of TAGS to help communities address youth violence issues. It offers young people, parents, school and community leaders an important tool to more effectively meet the challenge of school and community violence. By the end of 2002, FMCS plans to have TAGS-enabled youth violence prevention initiatives active in every region of the country.

Dispute Mediation

Except in the health care field, FMCS dispute mediation is a voluntary process wherein a third-party neutral helps labor and management reach agreement during term contract negotiations. Federal Mediation and Conciliation Service mediators work in a

¹⁹ Visit the *VoteHere* website at <<http://www.votehere.com>>.

²⁰ As of early 2002, *VoteHere* was the only all software, PC based election system to meet the Federal Election Commission standards.

²¹ Visit the *TrueBallot* website at <<http://trueballot.com>>.

²² FMCS receives Congressional funding primarily for mediating labor-management disputes and providing preventive mediation services to private sector unions and employers in connection therewith. In other cases, FMCS seeks reimbursement for actual costs when doing so is necessary to avoid spending appropriated dollars on non-appropriated activities.

continuum of dispute mediation from traditional or power-based to cooperative or interest-based models. Technology tools are utilized throughout the continuum.

Traditional Bargaining

Traditional collective bargaining consists of face-to-face meetings between the parties. The parties usually begin by setting ground rules and exchanging proposals for new collective bargaining language. Meetings typically involve sharing information and exchanging proposals. Both the union and employer make supporting arguments to justify their positions. Mediator interaction in this process is varied. The mediator may become involved in traditional negotiations early on, during the latter stages of negotiations or after the parties have reached an impasse.

Early applications of technology in traditional bargaining were as simple as telephone conferencing and utilizing laptop computers to record minutes during meetings. Today, parties frequently utilize computers to draft, amend and exchange proposals. As parties continue to meet face-to-face, each side keeps records of the proceedings while utilizing the copy machine extensively. Large notebooks containing records of the proceedings begin to appear at the bargaining table. Conference calls are occasionally used when one or more participants are unavailable.

The introduction of advanced technology tools into traditional bargaining has helped parties do more than simply manage information. Technology tools available through FMCS improve the negotiating process. FMCS customers use technology tools to convene the meeting, manipulate data, conduct remote meetings, improve record keeping and enhance the overall process. For example, imagine a computer screen with a series of folders or web site areas. The chart (*identify chart*) included in this article *infra* outlines a typical computer set up for traditional bargaining. Each folder or web site contains a complex array of information, accessible according to the limits set by the parties.

The Web pages may be accessed via the Internet, an intranet or local area network. This technology permits parties to negotiate collective bargaining agreements more efficiently. One only needs to access the Internet to participate in the collective bargaining process. Participation can be further enhanced by utilizing a telephone or videoconference. The technology changes the skills necessary for collective bargaining for both the participants and the mediator. These different skills will be discussed *infra*.

Interest-Based Bargaining

At the other end of the continuum of collective bargaining is *interest based bargaining* ("IBB"). At its most fundamental level, IBB can be defined as an alternative style of bargaining that trained negotiators use to achieve positive results for both parties through cooperation. It is a problem solving/group consensus approach to negotiations that focuses on the interests of the parties. The interest-based problem solving cycle involves several steps. Each step will be discussed first from conventional paper technology then from computer assisted TAGS technology from FMCS. The interest-based process is a problem solving step system that helps participants: (1) identify the problem or issue, (2) identify the interests of the parties concerning the issue, (3) generate options for possible solutions, (4) apply criteria to those options, and (5) develop solutions using a consensus decision making model.

In the first step of the interest based process the parties jointly select, define and focus an issue until it is understood. This process is usually done orally face-to-face and is the same whether TAGS is used or not. The parties are not discussing solutions to the problem at this stage. The use of technology at this stage of the process could include remote meetings via Internet and recording utilizing a computer.

The next step involves identifying and listing each side's interests concerning the issue. Interests are concerns, needs and desires behind the issue. Interests make it clear why the issue needs to be addressed. The format for this step is the same as issue identification, orally face-to-face. The use of technology at this stage of the process is the same as issue identification in step one. Again, parties are not discussing solutions to the problem at this stage. In each of these steps, it is important for the mediator to manage participant time to include a mix of computer input and traditional discussion.

Possible solutions to the issue are generated using brainstorming techniques. Before the introduction of technology tools, they were typically hand written on a paper flip chart. There are some inherent disadvantages to using a flip chart, which can hinder the process:

- The scribe is unable to write as fast as people speak.
- Only one person can post ideas to the flip chart at a time.
- All the ideas are not listed on the flip chart.
- The scribe filters ideas through his or her own thought process.
- Shy people will frequently not participate.
- Strong individuals may dominate.
- Subordinate may hold back because of presence of the superior.

Now imagine flip charting with technology injected into the process. As an example, imagine fifteen people each with a laptop computer in front of them. They are brainstorming possible solutions to a problem by entering their ideas into the computer. As they enter ideas, each person can see everyone else's ideas on a virtual electronic flip chart that is displayed on their computer screen as well as at the front of the room. Not only are the ideas recorded exactly as intended, but they are also anonymous. Participation is enhanced and more ideas are put forth in a much shorter period of time than paper flip charting. A record can easily be printed at any stage of the flip charting. No more transcribing from flip chart papers. More time can be spent evaluating solutions rather than trying to find them on one of the flip chart papers taped to the wall. Participants in the above example meet at the same time and location. With TAGS, participants often do not have to be at the same location or even participate at the same time. All that is needed is access to the Internet.

Once options have been generated, criteria or standards are applied to the options. Criteria can be applied in a matrix format where the parties rank each option by the number of criteria satisfied. In the paper world, this requires exceptional flip charting skills, hours of bargaining time and plenty of flip chart paper and tape.

TAGS enables parties to individually apply criteria to each option and then collectively view and discuss the results with or without displaying statistics. Any flip chart method or matrix can easily be adapted and utilized with the TAGS technology. Options can then be ranked using a variety of methods such as numerical ranking,

weighted voting, or level of importance. A well chosen method can help participants quickly identify the options that best satisfy the interests of the parties.

The final step is fashioning a solution by filtering and merging options that meet the jointly selected criteria of the parties. In some cases, parties also use TAGS to develop an action plan.

WEB SITE AREA	CONTENT	ACCESS
Resource	Relevant documents such as collective bargaining agreements, memoranda of agreement, and statistics from the Department of Labor, OSHA regulations etc. Read only documents.	All
Proposal / Issues	Traditional: Proposals from both sides are submitted and kept here. Automatically attributed to the submitter with a date and time stamp. IBB: Issues to be addressed in bargaining as selected by the parties.	All
Communication	Messages, remote discussions and meeting coordination.	All
Status at a Glance	Status of every contract article or other item as defined by the parties. E.g., in progress, tabled, completed, assigned to committee for more information.	All
Tentative Agreements	As articles are agreed to they are moved here in their entirety.	All
Work Area - Article # & Title (Article 4 and Hours of work)	This is where proposals or issues are worked on by parties. Traditional: Proposals and supporting information are routed here from the reference and proposal areas. IBB: There are separate areas containing interests, options, prioritized options and solutions.	All
Private Caucus Area Labor	Union committee members can discuss issues in this private area, review suggested language or work on amended proposals.	Union Committee Members & Mediator
Private Caucus Area Management	Union committee members can discuss issues in this private area, review suggested language or work on amended proposals.	Management Committee Members & Mediator
Private Sidebar area	Only designated labor & management representatives can access this area. Used to share information and ideas that might not be appropriate to share with their bargaining teams.	Union & Management Principals & Mediator
Public Area	Web site accessed on the internet for press releases and constituent updates	Parties decide who has access
Parking Lot	A place for important matters that are raised at a time when discussion must be postponed.	All

Considerations

"FMCS's implementation of TAGS demonstrates the essential elements of successful implementation of collaborative technology," notes Julia Young, Vice President of Facilitate.com. "Beyond selecting the right technology tools, it is important to articulate clear objectives for each collaborative effort, both in terms of the products

that you wish to produce and the people dynamics that are necessary for a lasting solution."

At the conclusion of a wide variety of TAGS applications throughout the United States, FMCS asked participants to complete assessments regarding the value of FMCS technology tools. These assessments, some more formal than others, have been overwhelmingly supportive. Some were gathered using TAGS technology – whereby the contributor was, and remains anonymous. Others were obtained through interview.²³

As previously discussed, a major motivator in the use of this technology is savings. This savings can clearly be measured in reduced meeting time and travel costs. However, the savings in administrative time, decision and implementation time, and relationship – both individual and institutional – are just as meaningful.

Thomas Haun, Director of Apprenticeship for the International Association of Heat and Frost Insulators and Asbestos Workers, marveled at the amount of work accomplished in a brief period of time. The Asbestos Workers Conference sought the input of close to two hundred participants on organizational strategies. According to Haun, "We couldn't have accomplished in a week, the work we completed with TAGS in two one-half day sessions." Haun saw value in TAGS' "ability to draw on the thought processes of a huge gathering of people in a short period of time." At the conclusion of those two half days, participants had a neatly organized document, which captured the suggestions and comments of all participants, and the subsequent prioritizing of those suggestions by the entire conference.

Jennifer Wood, Chief Legal Counsel for the Rhode Island Department of Education (*RIDE*), thinks that one of the ways TAGS provides savings is through participants' ability to work offline and frame issues. "We were not always faced with taking a group of people out of the office to work at the same time, which resulted in a tremendous human resource savings." This capacity also "encouraged participants to evaluate issues offline and outside the context of collective bargaining. We had a broader conversation without enormous amounts of time invested."

Participants in the Teachers Federal Credit Union and OPEIU negotiations used TAGS to give anonymous feedback at the conclusion of their technology-assisted IBB sessions. They unanimously ranked the negotiations as excellent as compared to others. An overwhelming majority graded the technology's effectiveness as excellent, and a large majority said they believed TAGS had useful applications in other aspects of

²³ Included are comments from participants of FMCS mediated/facilitated:

- IBB negotiations between the Teachers Federal Credit Union and the Office and Professional Employees International Union ("OPEIU") in Minneapolis, Minnesota;
- Relationship by Objective program conducted for Sunoco Chemicals and the Paper and Allied Chemical Employees union ("PACE") in Philadelphia, Pennsylvania;
- Traditional collective bargaining between Levy Foods and Hotel Employees and Restaurant Employees ("HERE") union with participants in Chicago, New York and Los Angeles;
- Strategic planning session for a national meeting of the International Association of Heat and Frost Insulators and Asbestos Workers Union and its union-employing contractors conducted in Las Vegas, Nevada; and
- Interest based bargaining between Rhode Island Department of Education ("RIDE") and Rhode Island Federation of Teachers and Health Professionals ("AFT").

All parties and individuals referred to herein granted FMCS explicit permission to use their names and related information in this article.

their relationship. There was near unanimous agreement that they would recommend TAGS to other groups for their negotiations. Participant free-form comments in the Credit Union negotiations included the following regarding the speed of using technology versus traditional means:

“I imagined we would be here forever, TAGS really simplified things.”

“A lot less time was wasted discussing things that weren’t relevant to the issue.”

“[TAGS]...really made the process more efficient and effective.”

Choosing the Tools

When a group engages in problem solving, how does it decide whether to use technology tools? Which technology tools are appropriate? Since process can sometimes interfere with the parties’ focus on content, appropriate use of tools becomes critical to the outcome. These tools typically include the software, hardware, third party neutral (mediator, facilitator, arbitrator, etc.), consultants, advisors and parties’ process skills.²⁴ If the parties rely on the wrong combination of tools, the tools can detract from the intended purpose, and quite possibly get in the way of the users’ deliberations and ability to resolve the issue at hand.

In a heavily personalized process such as group problem solving, technology’s benefit is limited by participants’ understanding of the tools and ability to appropriately use them. This critical piece has not been lost on FMCS in its approach to applying technology to group problem solving.

The first critical step of this approach is an analysis of the parties’ objectives. The mediator/facilitator has to believe that the parties’ situation is one that can benefit from applying technology. Can the technology add value? What combination of software and hardware may be appropriate for the meeting’s purpose? What physical environment best suits the circumstances? These important diagnostics help establish realistic expectations and gauge the suitability of the technology application. At times, technology may not make sense. At least several clients have been steered away from TAGS because the mediator did not think the circumstances supported use of the tools.

Technological innovations (whatever form they may take) cannot and will not replace the necessity of human interaction when parties seek solutions. The intrinsic value of mediated negotiation is that there is no assumption of a single remedy to a problem. The parties are free, with the process assistance of a trained mediator, to find their own solutions. This does not change when technology is introduced. Therefore, if the parties are unable or unwilling to engage in the hard work of collaboration, communication, understanding and negotiation, they will not have any greater success in addressing their problem using these tools than they would in a traditional engagement.

Technology helps the parties get to the meat of the matter more quickly and with greater ease. It can also help narrow the possibilities. And as previously discussed, the processes of information gathering, sorting, ranking and memorializing are neatly accomplished, which leaves the parties to the human side of the dispute – the solutions.

The recent controversy over a computer generated “answer” to the college football national championship issue sends a clear message that people are reluctant to have technology determine subjective solutions. After years of separate voting by the

²⁴ Communication skills, decision making skills, problem solving models, etc.

college football coaches and the college football writers (who sometimes came up with different ideas of who should be declared the national champion), the Bowl Championship Series was born. A number of objective criteria, including the coaches and writers polls, are fed into a program designed to have the program determine the best college football team. After four or five years, with almost as many revisions during this same time, the 2001 version found continued controversy.

Because computer generated solutions don't always square with human view of the appropriate outcome, people do not want computers to provide such answers. When we want to find complex mathematical formulas, or easy ways to communicate, compose, factor or figure, technology has been invaluable. Technology helps us with the perfunctory pieces of the puzzle, but not the personal pieces. It can help to make the decision by providing important pieces of information, but it cannot make the decision, except those that are purely objective, such as sorting data or finding the lowest price on an item. But even then, it is not always clear-cut; the vendor with the lowest price might also have a terrible customer relations history – a subjective element in the human decision making process.²⁵

In contrast to the football championship approach, FMCS does not rely on technology to automatically generate the solution. It is only with the right combination of participant dedication, appropriate technology, facilitator talent and the old standards of open communication, patience and willingness to cooperate will the problems be conquered.

Looking back on her IBB experience using TAGS, RIDE's Jennifer Wood said, "The collaborative bargaining process using TAGS altered the Labor-Management relationship." However, she cautioned that the two elements were inseparable. She stated, "TAGS alone would not have accomplished the change, and neither would IBB". It was the right combination of human and technological interaction that created the synergy to move away from the not-so-agreeable past to a new level of respect across team lines.

Role of the Third Party Neutral

Third party neutrals must be attuned to the needs, focus and activity of the group they are working with to determine the appropriate time to use the technology tools. As useful as it is, technology should only be used intermittently to accomplish specific process objectives. When FMCS sets up its wireless networked laptop computers, participants initially focus on the machinery rather than each other. They are so captivated with input functions that they tend to ignore each other's contributions. Brainstorming options can become individual exercises. The facilitator needs to focus the group, encouraging them to engage each other to achieve ultimate success.

This is analogous to a meeting where participants are so busy expressing their point of view that they fail to listen to anyone else. During synchronous face-to-face TAGS meetings, the facilitator can turn off the "add an idea" function, enable the "build" function, or simply direct the participants to push their screens back and start talking with one another. The advantage to using technology is that after providing individual input, paying attention to other's input is easily accomplished through a combination of

²⁵ Although there are programs that will also rank vendors by user determined criteria, including customer service feedback.

active listening and nonverbal engagement. In many ways this forced focus helps broaden the discussion. Timing in these meetings is critical, with the facilitator leading the group through a balanced mix of discussion, input, interaction, comment, decision-making and reflection.

The Remote Meeting

As discussed, a remote meeting can be something as simple as a conference call. Using basic telephone technology, people have engaged in remote synchronous meetings for decades. With the advent of computer technology, remote asynchronous meetings have become possible.

In technology-enabled remote meetings, as in many other computer applications, the value of technology is in the mechanics of the process. When participants use leading edge tools to memorialize, sort, organize, distribute and prioritize meeting input, they are free to devote more time to engage one another over the real issues they face. In addition, when parties need to come together from different corners of a city, state or country, there is real value to a virtual meeting where travel is not necessary, nor is the time devoted to travel logistics. Instead, time spent is directly related to the issue at hand.

During face-to-face meetings, it is often difficult to hold parties' attention when interruptions occur, other issues demand attention or when private discussions develop. During remote meetings, participants encounter these same process issues in addition to inherent difficulty communicating with others. It is difficult to replicate online the time honored value of sitting across the table from those with whom we negotiate, look them in the eye, make or receive impassioned presentations and gauge resolve and sincerity reflected by body language. Productive group problem solving, after all, is an interactive experience.

In this setting, the facilitator has to work hard to ensure that group participation and exchange are taking place. Only certain remote technologies have the capability to provide visual interaction. For those that do not, the facilitator must help the group engage in activities that will give insight into the group's activities and dynamics. The remote mediator/facilitator monitors participation by engaging in status checks with individuals and by tracking computer input and feedback.

The three authors of this article used remote technology extensively in developing the outline, timeline, exchanging drafts and giving each other feedback. Other groups productively use electronic conference rooms for similar cooperative efforts. However, when parties have different positions, different interests, or different goals, remote meeting becomes more complex.

Skills

When describing their experience with FMCS TAGS technology, participants usually speak in highly favorable terms. Even those who are very experienced with computers, the Internet, conferencing, etc., find the technology fascinating. There are occasions, however, when TAGS facilitators meet with a group that includes individuals with little or no computer experience. When these participants sit down to the computers, one can genuinely sense their apprehension.

Due to the simplicity of the software utilized, not many of these reluctant participants maintain that apprehension. Feedback demonstrates that even the most reticent session members quickly caught on. The software is generally easy to use, and with a few minutes of basic instruction participants are on their way. One member of a negotiating group described his experience in this way, "I don't have a lot of experience on computers...(brief instruction) helped me be comfortable from the beginning."

Jennifer Woods from RIDE observed, "There were people who participated who never touched a computer keyboard all the way across the spectrum to those who run MIS. Everyone was able to access the system, even those who never used a computer before."

As technology assumes a greater role in the collective bargaining arena, additional skills will be necessary for both negotiators and mediators to effectively participate in these types of negotiation. The basics of computer operation are important, such as entering and editing text, and using the keyboard or a mouse. TAGS technology does not require any significant typing skills. In fact, participants need only use the two-finger method. Fortunately, as previously discussed, the computer novice or someone with no computer experience can pick up these basic skills rather quickly. For some applications, such as navigating a web page, resizing windows and manipulating text become important. It is essential for the mediator to have these basic skills, along with the ability to teach these skills to adults.

Mediators need additional skills and comprehension of computer operation, such as understanding file management, uploading and downloading documents, equipment set up, software integration and troubleshooting hardware and software problems. The mediator's process skills do not change. Fundamental mediation skills remain the same whether technology is utilized or not.

Acceptability

The lack of acceptance of technology has the potential to limit its use in the negotiation process. Lack of acceptance manifests itself in mediators or facilitators, as well as in the ranks of the employer and union negotiating committees. Lack of acceptance can be as basic as the fear of computers or concerns over typing and spelling. There could be a more generalized objection to using modern means and methods. Sometimes, there is the concern that technology is not secure, especially when using the Internet.

To deal with mediator concerns, FMCS has made TAGS mediation/facilitation a voluntary skill. Yet a huge cadre of qualified mediators has volunteered for TAGS training since its inception in late 1999. TAGS is an elective with a huge following.

For participants, different concerns exist. Many times these concerns are really about change issues within the culture of an organization. As when dealing with other dynamics of any group, leadership must weigh the risk/benefit in applying technology when there is resistance among the group. How can this resistance be overcome? How long will it take? Will the use of technology over the objections of some interfere with the long-term goals of the group? It could be that some simple non-controversial application might raise comfort levels with the tools and minimize those objections. Although it is probable that groups have struggled with the issue of acceptability prior to

making initial inquiries into TAGS, no group has yet abandoned the approach because of acceptability questions.

Anonymity

Technology meeting sessions usually begin slowly. Until participants understand and trust the anonymous nature of contributions, they are hesitant to stray from safe, conservative interactions. However, once they see contributions posted without attribution, they become more thoughtful, creative, and willing to share the more critical ideas.

In an FMCS Relationship By Objectives workshop, participants are asked to discuss what affirmative steps each party can take to improve the relationship. David Lebovitz, Plant Manager for Sunoco, recollected that the level of honesty achieved in the Sunoco/PACE RBO would not have been possible without TAGS. "The anonymity allowed us all to contribute freely and honestly without worrying what others might think of the contribution."

FMCS also used TAGS to support an activity within the Los Angeles Police Department. FMCS worked with a particular unit, assisting in the identification and resolution of significant problems within that unit. These were extremely sensitive discussions that required the highest level of confidentiality. FMCS Commissioner James Stott reported that participants were initially concerned that "a computer geek could, given enough time, break into the TAGS code. If this were to happen each participant's comments could be fully discovered, recorded and disclosed." He continues, "Comment attribution was a very big concern at the outset. A large part of this free-floating anxiety was based on political and professional insecurities. Their concerns were quickly dispelled as the participants used the TAGS equipment."

Stott went on to say that "TAGS leveled the organizational highs and lows because of the fundamental inclusion of confidentiality as well as the constant reminder and understanding that there was no way that attribution could be assigned to any interview response or TAGS input."

Thomas Haun, from the Asbestos Workers, stated, "Anonymity makes a tremendous difference. Too often, people only speak when called upon...they have a tough time going against the flow. This (TAGS) allowed them to test the waters." The anonymous nature of TAGS "...allows the minority viewpoint to be aired," Haun said. "It broke down some of the barriers between large and small locals, demonstrating that we all have the same problems."

In considering the value of anonymity, Jennifer Wood stated, "One significant power of the tool was in evaluation of options, without resorting to 'team' positions. We were able to objectively weigh alternatives since they were not associated with union or management."

Investments and Dividends

Commissioner Walter Bednarczyk, from FMCS's Philadelphia office, has been involved in numerous TAGS applications over the last two years. Together with FMCS Director of Mediation Technology Services, Michael Wolf and Commissioner Joe Kelleher, Commissioner Bednarczyk facilitated/mediated the Rhode Island Department of Education (RIDE) contract negotiations with a local bargaining unit organized by the

American Federation of Teachers (AFT). Bednarczyk sees TAGS as "...a method modification tool. The parties still need to engage in the hard work of negotiations, but the tool allows them to do so more efficiently." It will also allow them to tackle issues they might have thought were too difficult. Bednarczyk speculates that, "Some of the tough issues raised in negotiations would not have otherwise been brought to the table, but for the functionality of the programs." Once again anonymity was important, but so too was the capacity to guide users to solutions that had a higher probability of success. Although the software makes the job of the participant easier, there is at least some reciprocal ratcheting up of effort for the facilitator. Bednarczyk admits that the facilitator spends more time in preparation than in a case that was not technology-enabled. It's the "behind the scenes" work that consumes this extra time – such as hardware set up, physical layouts, or the detailed programming of software, all of which makes the user's experience as easy as possible.

This extra time for the facilitator is a particularly important factor when new hardware or software is being used, or when the facilitators take on a new challenge. In preparation for the Asbestos Workers conference in May, 2001, ten facilitators spent a full day – and part of the night – setting up and testing one hundred TAGS computers for two hundred conference attendees. This was the first in a series of mega-conferences that FMCS has facilitated in a variety of industries where sometimes hundreds of laptops are in use. Room configurations, electrical needs, breakout rooms, proximity to remote servers, and programming issues drive these set up logistics. It is not unusual for scores of hours to be spent preparing for a big conference. Bednarczyk warns, "Because of these requirements, meeting planning, meeting times, locations, and travel all have to be thought out much more in advance."

However, participants in TAGS-enabled meetings report that the technology tools often reduce meeting time by fifty to eighty percent, with better substantive results than if they had not used FMCS technology tools. In the case of the Asbestos Workers Conference, two hundred participants each saved approximately thirty-two hours of meeting time, for a total of 6,400 saved person-hours. Even after including all mediator travel, preparation and delivery time, each conference attendee saved twenty working hours for each hour expended by the FMCS mediators. That is a great investment of – U.S. tax dollars.

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